INDUSTRIAL HYGIENE INFORMATION AND REGULATORY ACTIONS SUMMARY October 2001

REGULATORY ACTIONS

OSHA Proposed Rules

OSHA Initiates Program to Safeguard Shipbreaking Workers

OSHA recently announced a national emphasis program to increase federal inspections of shipbreaking operations to reduce or eliminate workplace hazards in the industry. Shipbreaking, also know as ship scrapping and ship disposal, involves breaking down of a vessel's structure, including the removal of all gear and equipment.

It is considered one of the most dangerous segments of the maritime industry.

Over the next five years, it is projected that the U.S. Navy will dispose of more than 60 warships. The Maritime Administration (MARAD) will scrap more than 50 large vessels, while the U.S. Coast Guard will break up more than 200 small- to mid-sized vessels.

The national emphasis program calls for OSHA area offices to begin conducting targeted inspections of known shipbreaking operations. Additionally, OSHA's regional administrators will ensure that annual programmed comprehensive inspections are conducted for every Navy and MARAD vessel undergoing shipbreaking operations.

The inspections will focus on common hazards or workplace activities likely to cause injury or illness among workers. Among those are: asbestos, PCB and lead exposure; hazard communication; confined spaces; hearing conservation; fire prevention; personal protective equipment; emergency response and first aid; cutting and welding; paint removal; powered industrial truck operations; oil/fuel removal and tank cleaning; cranes; scaffolding; and fall protection.

The program comes on the heels of a 1999 Memorandum of Agreement between OSHA and the Departments of Defense and Transportation, and EPA that established numerous requirements and responsibilities designed to reduce work-related injuries, illnesses and environmental hazards during ship scrapping operations. The program is also in line with OSHA's five-year strategic plan to reduce injuries and illnesses in targeted areas, including the shipyard industry.

OSHA ACTIVITIES

John Henshaw was confirmed by the Senate as the new assistant secretary of labor for OSHA. Henshaw is the former director of environment, safety and health for Astaris LLC of St. Louis, Mo., which makes phosphorous chemicals, phosphoric acid and phosphate salt. Henshaw won praise in equal measure from Democrats and Republicans on the Senate Health, Education, Labor and Pensions Committee last week during his confirmation hearing. Union officials and industry associations have praised Henshaw's health and safety experience and supported his nomination.

Impending OSHA visits

OSHA sent letters to 14,000 sites notifying them that their injury and illness rates exceed those of most workplaces and encouraging them to take steps to reduce hazards and protect their workers. Over the next four months, OSHA plans to inspect about 1,000 sites that experienced especially high injury and illness rates in 1999. OSHA identified the sites with the highest lost workday injury and illness rates based on data reported by 80,000 employers surveyed by the agency last year. Those in the inspection pool of 14,000 had eight or more injuries and illnesses resulting in lost workdays for every 100 full-time workers. Nationwide, the average U.S. workplace had three instances for every 100 workers. Each workplace receiving the letter also got a copy of its injury and illness data along with a list of the most frequently violated OSHA standards for its specific industry. The 14,000 sites are listed, by state, alphabetically on OSHA's Web site at www.osha.gov on the Freedom of Information Act page. The list does not designate those targeted for inspection.

OSHA Proposes Delay in Recordkeeping Requirements

OSHA announced a proposed delay in the implementation of a few requirements of its final rule on Occupational Injury and Illness Recording and Reporting Requirements (66 FR 5916, January 19, 2001), which is scheduled to become effective on January 1, 2002.

OSHA has also determined that it will reconsider the provisions in the final rule for: recording occupational hearing loss based on the occurrence of a Standard Threshold Shift (STS) in hearing acuity (Section 1904.10); and defining "musculoskeletal disorder" (MSD) and checking the column on the OSHA 300 Log identifying a recordable MSD (Section 1904.12).

The current recordkeeping rule, which remains in effect until January 1, 2002, contained no specific threshold for recording hearing loss cases. In 1991, OSHA issued an enforcement policy on the criteria for recording occupational hearing loss, to remain in effect until new criteria were established by rulemaking. The 1991 policy stated that OSHA would cite employers for failing to record work related shifts in hearing of an average of 25dB or more at 2000, 3000, and 4000 Hertz in either ear. OSHA proposed that a STS would be defined as "a change in hearing threshold, relative to the most recent audiogram for that employee, of an average of 10 decibels (dB) or more at 2000,

3000 and 4000 hertz in one or both ears." Several commenters felt that there were problems with using an STS as a measure of recordable hearing loss and with the 10 dB level. OSHA believed that the record should be reopened to permit consideration of additional medical and other relevant evidence, and to explore alternative approaches.

OSHA placed an MSD column on the log as a means of gathering data under its Ergonomics Standard. Following Congressional disapproval of that standard, OSHA felt is was premature to define a MSD for recordkeeping purposes.

CONGRESSIONAL ACTIONS OF INTEREST

Labor Blames Bush, Business for 500,000 New Injuries

A union picket line greeted Secretary of Labor Elaine Chao as she opened the first public forum to discuss ergonomics injuries and what should be done to prevent them. The AFL-CIO is angry with Congress and the Bush administration for overturning a Clinton administration regulation that would have required employers to establish programs to reduce injuries like carpal tunnel syndrome. Union members carried signs that read "Stop the Pain" and a giant papier-mâché hand with a bandage labeled "Ergonomics Forum Band-Aid" -- a reference to labor's allegation that the forums being held by the Department of Labor are designed to support a predetermined conclusion that no new regulation is needed. The protests outside the forum site were mild compared with what AFL-CIO Secretary-Treasurer Richard Trumka said inside the George Mason University conference room in Arlington. Trumka contends more than 500,000 workers have suffered ergonomics-related injuries since March 21, when President Bush signed the legislation repealing the regulation. Chao promised to listen to the forum testimony with an "open mind" and urged others to do the same. She says the department must address the concerns raised about the earlier ergonomics standard or Congress would overturn any new regulation as well. The agenda for the public forums and opportunities to make comments on ergonomics are available at the Occupational Safety and Health Administration's Web site (http://www.osha-slc.gov/ergonomics-standard/index.html).

Lawmakers In Texas, California, Maryland Tackling Mold Issue

In response to the growing concerns about the presence of mold in buildings, lawmakers in three states Texas, California and Maryland are pushing through legislation to combat the problem.

Texas

In Texas, two bills passed the House in May that will require newly constructed schools or those with major renovations to perform IAQ testing and comply with mandatory IAQ guidelines. Currently, schools in Texas only have voluntary guidelines for IAQ. The bills would also require the Texas Department of Health to write mandatory guidelines. In fact, IE Connections was recently contacted by department officials to get a listing of “certified IAQ professionals in the state of Texas.”

HB 2006 would require air-quality tests 90 days after a school is constructed or significantly renovated. A district superintendent could also require tests, because of the illness of students or staff that may be connected to polluted air. HB 2007 directs the state Health Department to draft mandatory air-quality standards for new or substantially renovated schools. If it becomes law, it will supersede the voluntary air-quality standards approved by the Legislature in 1995, according the to Austin American Statesman newspaper.

California

In California, the already infamous Senate Bill 732 passed out of its second policy committee, Senate Judiciary, in May and will next be heard in the Senate Appropriations Committee. That meeting was scheduled as IE Connections was going to press. If it is determined there is a cost to the state of $150,000 or more, the bill will be sent to the Suspense File while the decision is made on whether or not the state can afford to develop standards.

The bill seeks to address the existing policy void on mold issues by providing uniform mold standards, publishing education materials, and requiring commercial and residential mold disclosure on property transactions.

According to a recent analysis of the bill, it faces opposition from the Building Owners and Managers Association of California, and the insurance, building, lumber and paper industries, among others. Organizations in support of SB 732 are the American Lung Association, the California League of Conservation Voters, City of Santa Monica, and others.

There are also two other bills making their way through the California Legislature but have not received as much media or legislative attention as SB 732. California Assembly Bill 178 would require landlords who know or have reason to believe mold is present and is a health hazard to disclose this to prospective tenants. AB 284 would require the Department of Health Services to establish toxic mold surveillance and a consumer complaint program.

Maryland

In Maryland, Senate Bill 283 was recently signed by Gov. Parris Glendening to establish a Task Force on Indoor Air Quality, which will provide a report by July 2002. The report must examine the nature, location, and extent of health and environmental risks posed to workers as a result of molds, spores, and other toxic organisms located in the HVAC systems of office buildings, including:

- The relative risks associated with the manufacture, maintenance, and repair of HVAC systems;
- Actual and projected costs for the medical treatment of HVAC-related illnesses; and

- Actual and projected costs in loss of worker productivity because of HVAC-related illnesses.

The task force must also make recommendations regarding:

- The prevention of workers' HVAC-related illnesses, including a monthly monitoring program to identify the probable onset of HVAC-related illnesses and their underlying causes;
- The institution of appropriate remedies and controls in office buildings that, because of the dangers of indoor air quality, expose workers to unwarranted health risks, including the best available treatment technology and the feasibility of voluntary prevention and pollution reduction programs;
- A plan to provide educational information and, as may be necessary, warnings to affected workers regarding health and environmental risks associated with the indoor air quality of their office building sites; and
- Legislative or regulatory measures that are necessary and appropriate to address current gaps in federal, state, and local protection of office workers from HVAC-borne toxins.

Also, signed into law in Maryland as of press time was an income tax credit for green buildings. The law provided for state income tax credits for specified costs for construction or rehabilitation of buildings and specified equipment to meet applicable energy efficiency and environmental standards established by the Maryland Energy Administration.

This article first appeared in the June issue of Indoor Environment Connections newspaper. More information is available from their web site at http://www.ieconnections.com/.

TECHNICAL ARTICLES OF INTEREST

"**An Evaluation of Short-Term Exposures to Metalworking Fluids in Small Machine Shops**", by ***D.M. O'Brien, G.M. Piacitelli, W.K. Sieber, R.T. Hughes, and J.D. Catalano.***

An estimated 1.2 million workers in the U.S. are potentially exposed to metal working fluids (MWF). MWF can be grouped into four categories: straight (undiluted mineral /fatty oils); soluble (water emulsions of mineral /fatty oils); synthetic (chemical solutions of organic compounds of water) and semisynthetic (emulsions of mineral oil with water and organic compounds similar to those found in synthetics).

A NIOSH study was conducted in 23 small machining shops using MWFs. Real time air monitoring using an aerosol photometer was performed to investigate the nature of the exposure and to examine the relationship between the instrument measurements and traditional sampling methods.

Exposure limits. The National Institute of Occupational Safety and Health (NIOSH) exposure criteria to MWF's is limited to 0.4 mg/m^3 on a full–shift basis as thoracic mass and 0.5 mg/m^3 total particulate. Although OSHA presently regulates MWFs as "mineral oil mists", the OSHA Metalworking Fluids Standards Advisory Committee recommended the NIOSH limits.

Monitoring. Two methods of monitoring MWF in sample metal working shops were also compared. Real time air monitoring using an aerosol photometer (DataRAM, MIE Inc, Bedford Mass) and the traditional air monitoring. The traditional air monitoring sample train consisted of a cyclone preseparator, three-piece open face polystyrene filter cassettes (for thoracic section), and a separate tared 37 mm Teflon filter for total aerosols.

Conclusions. Results showed that workers may be exposed to high peak concentrations of MWF aerosol, even in facilities where the TWA exposures are below recommended exposure limits. Real time monitoring can serve as a useful screening tool to eliminate the sources of these peak exposures or identify areas where additional sampling is warranted. The authors caution that real time monitoring can overestimate concentration readings, but the use of instrument calibration factors can be used to compensate for this shortfall.

"How Maintenance Contributes to Poor Safety Performance", *author William H. Kincaid, P.E., CSP*.

The author states that equipment failures, particularly in today's technologically complex manufacturing sites, are inevitable unless companies embrace well-planned maintenance programs. Failing to do so can have tragic consequences. He cites a fatal incident where a gas-fired paint-drying oven at a manufacturing plant shut down unexpectedly, and a crew was assigned to relight it. The crew was under pressure to troubleshoot and re-light the oven as soon as possible to minimize the unscheduled downtime. After a few attempts to light the pilot, gas had built up in the oven. One final attempt to light the pilot sparked an explosion in the oven that caused the death of a crewmember. The root cause was blamed partly on maintenance. Some critical parts of the oven were out of adjustment. Valves were out of alignment, not calibrated or nonfunctional. Important safety-related settings were incorrect. Further, similar equipment in the plant had been the center of some previous troubles that, if seen as warning signs, could have led to a detailed review of safety systems and devices.

Regular Inspections. The author continues to state that equipment failures are inevitable unless influenced by the quality, frequency and extent of maintenance activities. In the preceding case, the complicated oven's safety devices and controls required regular scrutiny by highly qualified people. Incidents with other, similar equipment that pointed to problems should have been the beginning of prompt technical examinations and remedial work. A typical preventive maintenance program can be based on regular inspections to find deficiencies, make minor adjustments and lubricate moving parts. Because maintenance has costs as well as benefits, companies have to

carefully weigh their needs against available resources to determine how much to allocate to maintenance. Downsizing when money is tight, or shutting off funding for periodic training or equipment maintenance, might not necessarily save money in the long term. One reason is that prevention generally suffers first by being postponed or eliminated when budgets and staffing levels shrink. Breakdowns must be repaired, so the unplanned emergency work is not considered as expendable. Without some type of planned maintenance, facilities can rely only upon observable warning signs or breakdowns as triggers for unplanned action. Problems arise when there are delays in responding to signs of impending failure. Quick, reliable communication between operators and maintenance is critical.

Operator Involvement. The author continues to say that operators need to know the importance of early communication when they detect warning signs of a need for maintenance. They need to know that their reports are taken seriously. If not, they will quickly lose interest in reporting. In some locations, employee reports are only a high priority when there is a possibility of lost production or a grievance. Also, employees cannot report without a knowledge of typical warning signs, so training and experience should teach operators how to monitor the condition of their equipment. The author then cites an example of an accident that involved forklift driver and poor maintenance of his equipment. He continues to say that in cases where operators may not be capable of detecting deficiencies, preventive maintenance should be implemented to the extent necessary to provide safe, productive and reliable equipment.

Training Needed. Regular training is such a valuable part of good maintenance that it should be a part of annual maintenance budgets. The drive to make equipment more efficient has resulted in continuous technical advancement, and it only makes sense to help maintenance staffers concurrently improve their working knowledge. Particularly when safety may be affected by mechanical failures, great care should be taken to use the technical knowledge developed by the machine's designers, builders and installers. Ignoring this knowledge base might be disastrous. There are many approaches to maintenance, so there is no single recommendation that can be made for a wide audience. Technical knowledge, preventive measures and appropriate monitoring of equipment should be implemented, where appropriate, to meet the intertwined needs of safety, productivity and reliability. The important role of maintenance in supporting a safe working environment should not be ignored.

Implementing “5S “ to promote Safety and Housekeeping, *author John E. Becker*.

Mr. Becker describes a management process and philosophy that promotes an environment for proactive safety. The author describes components and the origin of the Japanese 5S philosophy: **Sorting, Simplifying, Sweeping, Standardizing, and Self-discipline.**

1. *Sorting* identifies what is necessary to perform the work. This provides a means for eliminating excess or unnecessary items.

2. *Simplifying* defines where and how the tools to perform a job will be arranged. This may include a system for systemically verifying that the necessary elements are available and organized by frequency of use

3. *Sweeping* provides for routine maintenance and general upkeep of the process

4. *Standardizing* involves the review of existing standards and procedures in order to eliminate non-conforming work practices. This step relies on a review of the previous three steps.

5. *Self-discipline* installs the work culture and reinforces the behaviors necessary to maintain the 5S program in the long term. The article cites case studies in which this philosophy was successfully used to promote safety initiatives at Boeing Co., and Cooke Brothers Ltd, a British metal manufacturing company.

OTHER ITEMS OF INTEREST

"**Safety in Numbers**", by ***Tony Cantarella,*** Occupational Health and Safety

"As companies look for ways to make themselves more competitive -- particularly in the current economy -- it is important for them aggressively to examine ways to control costs and weather difficult times. Company management has in many cases come to view insurance premiums for worker's compensation as just another fixed overhead expense, rather than looking at these premiums as controllable costs. This is where a culture shift at all levels of the organization can save millions of dollars a year."

The National Safety Council reports that the cost to the economy of job-related injuries is more that $127 billion. The actual cost of workplace injuries can be two to five times the cost of the worker's compensation when you consider property damage, insurance premiums, reduced product quality, reduced productivity, overtime, and the like.

Corporate culture can do a lot to reduce accidents. Refusal to accept "near misses" can start to stem the tide. Often, accidents waiting to happen are known to employees and supervisors. How often have you heard workers being told to "watch out for the third step" or similar admonishments? Mr. Cantarella advises that companies can save millions by creating a robust safety culture and promoting the attitude where underlying causes of accidents and illnesses are identified and then fixed. The benefits extend well beyond costs to improved product quality, worker/management relations, and a host of benefits.

"**Chemical Protective Clothing: *The last line of defense requires a first-rate education.***", by ***Todd R. Carroll,*** Occupational Health and Safety

"Chemical protective clothing (CPC) should be considered the last line of defense in any chemical handling operation. Every effort should be made to substitute for less hazardous chemicals where possible or to develop and implement engineering controls

that minimize or eliminate human contact with chemical hazards where economically feasible. If CPC must be used, however, product selection should be based on the assumption the wearer will be exposed to the chemical during use. And because there is no clear-cut guidance from OSHA on selecting CPC, this means a protective clothing user in the United States must obtain a good education on the basics of proper selection."

In the U.S., the NFPA has moved to fill the void in government specifications by promulgating four standards: NFPA 1991 (for vapor protection), NFPA 1992 (for liquid splash protection), NFPA 1999 (for EMT tasks), and NFPA 1994 (related to terrorism and biohazard situations). Tests are mainly permeation or penetration tests of the fabric with some testing of the ensemble, but not a true performance test. Comprehensive criteria seem to be stymied by the desires of numerous manufacturers. But on the bright side, the company web sites often have well designed guides to selection.

In contrast to the U.S., the European community has issued a directive requiring manufacturers to label the clothing with a mark in accordance with one or more performance tests. These classifications are based on scenarios for use, and the testing follows that scenario. The new system has replaced the national systems formerly in use to simplify selection for a given use

A three-step process follows the basic IH tenants:

- recognition of the class of hazard and workplace situation considering the individual's needs, such as use of disposable, limited use, or re-usable fabrics;
- evaluation of the exposure situation and risks and the garment capabilities and configurations; and
- control of the hazard through proper application of the selected garment.

Mr. Carroll summarizes by saying: "Obviously, selecting the "optimal" CPC system that balances chemical resistance and durability with functionality and economics is a complex process. The decision is made even more difficult in the vacuum created by the lack of an OSHA standard. Understanding the relevant national and international test methods -- combined with using the three-stage strategy of Recognition, Evaluation, and Control -- will allow you to simplify this process and arrive at a more educated, and cost-effective selection that optimizes the most important factor of all: The health and safety of your workforce."

INTERNET NEWS

ASSE homepage. The American Society of Safety Engineers homepage has been redesigned. See http://www.ASSE.org/

The **Department of Environmental and Occupational Medicine at the University of Aberdeen, UK**, has launched an Internet forum on human exposure to hazardous substances. The site has been dubbed HEROX for human exposure research

organizations exchange, and it is located on the Web at www.herox.org. It includes a database of human exposure research within Europe, along with a newsletter, job openings, and recently published papers.

CCHEST homepage. The ABIH/BCSP Joint Committee was renamed this spring to the Council on Certification of Health, Environmental and Safety Technicians. They offer certifications for the Occupational Health and Safety Technologist, Construction Health and Safety Technician, and Safety Trained Supervisor in Construction. See information about their certifications on their new home page at http://www.CCHEST.org/.

AIHA homepage. The American Industrial Hygiene Association (AIHA) unveiled their new home page system at the AIHce in New Orleans. With a more consistent look and feel, and easier navigation cues, the site is being targeted for full integration with their businesses. A new "Marketplace" will link to AIHA products, and a search capability will allow text searching for content on their system. They welcome your comments through the site at http://www.AIHA.org/.

INDUSTRIAL HYGIENE PROFESSIONAL NEWS

Study deems supply of OSH Professional adequate.

A study by the National Research Council pegs the current supply of occupational safety and health professionals at between 75,000 and 125,000. Supply seems to be adequate for current employer demand, according to the study, but researchers say considerable need exists to safeguard the growing number of employees in small firms, temporary jobs and transient jobs in construction and agriculture.

The Council identified the current educational pipeline supplying OSH professionals:

- 300 students graduate annually with masters degrees in occupational safety;
- 600 graduates with undergraduate degrees in safety;
- less than 10 students are awarded doctoral degrees in occupational safety each year;
- 400 masters-level industrial hygienists graduate each year;
- 90 students complete occupational medicine residencies each year;
- 0 students are awarded masters-level degrees in occupational health nursing each year.

Researchers are particularly concerned by the low number of doctoral students in occupational safety, which they say threatens the future viability of academic departments in the area of safety.

The number of graduates in occupational medicine and nursing are too low to replace existing practitioners, according to the study. The number of masters-level graduates in safety is "extremely low," says the study, but appears to be offset by employers' preference for hiring students with undergraduate degrees. The number of masters-level industrial hygienists seems equal to employer demands in the industrial sector, according to the study.

AIHA Names New Executive Director

The AIHA has named Richard A. "Dick" Strano, CAE, to be its executive director. Strano succeeds O. Gordon Banks, CAE, who is retiring at the end of the year after 12 years as the association's executive director. Strano comes to the association from the American Conference of Governmental Industrial Hygienists (ACGIH), in Cincinnati, where he served as executive director. He is expected to arrive at AIHA in October. As executive director, Strano will oversee a staff of 60 full-time and four part-time employees as well as an annual budget of $13 million. Strano has 30 years experience in association management, particularly in health-related association and foundation management. Before joining ACGIH, he served for eight years as president of the Washington-based American Osteopathic Healthcare Association. Earlier in his career, Strano was executive director of the Association for Healthcare Philanthropy in Washington, D.C., and as a division director for the Chicago-based American Hospital Association.

ACGIH Reaches Settlement in RCFC Lawsuit

In December 2000, the Refractory Ceramic Fibers Coalition (RCFC) filed suit against ACGIH® based on a concern about the meaning of the ACGIH TLV® for refractory ceramic fibers (RCF). ACGIH and the RCFC announced a settlement of the lawsuit clarifying ACGIH's position that TLVs are guidelines for exposures, and not standards to be enforced. ACGIH also agreed to review data developed by the RCFC regarding refractory ceramic fibers within its TLV setting procedures. The ACGIH web site has more information at http://www.acgih.org/members/CaseStudies.htm.

ABIH Offers first sitting of the Certified Associate Industrial Hygienist (CAIH) Examination

In June, eleven candidates sat for the first offering of the new "Associate" credential of the American Board of Industrial Hygiene (ABIH) at the AIHce and ASSE conference. ABIH has announced that four individuals were awarded the new credential – congratulations to John C. Banta, Matthew C. Kozak, Allen L. Wood, and Tami Froelich. Their names, along with those of the fifty-four new CIHs were posted on the ABIH web site. This "Associate" credential is designed for some practitioners of industrial hygiene who were previously not eligible for the CIH by virtue of either a narrow scope of practice or limited time of practice. The ABIH feels that adding this CAIH credential will improve the practice of industrial hygiene by creating a new benchmark for these practitioners. More information about this credential can be found on in set of point papers and FAQs on the ABIH web site at http://www.ABIH.org/.

PUBLICATIONS

NIOSH Study Finds Fire Fighters Working Along Highways Face Risk of Fatal Injuries

The U.S. Centers for Disease Control and Prevention's (CDC) NIOSH has issued a bulletin warning of the dangers fire fighters face while offering emergency assistance along busy highways. From 1995 to 1999, 17 fire fighters were struck and killed by motor vehicles while working along highways at crash scenes, an 89 percent increase over the number killed in the previous five years. The weather, time of day, lighting, traffic speed and volume, and road configuration are among the factors that affect fire fighter safety along roadways, the NIOSH bulletin noted. The bulletin recommends precautions for anticipation and preventing such risks. Among several recommendations for fire departments, NIOSH suggests that standard operating procedures for roadway operations should be developed and enforced, that fire fighters should be trained in safe procedures for operating near moving traffic, and that fire fighters should be provided with high-visibility apparel. See http://www.cdc.gov/niosh/whatsnew.html#aug01.

NIOSH COMPENDIUM SUMMARIZES FINDINGS RECOMMENDATIONS FROM LEAD INVESTIGATIONS

A new publication from the NIOSH summarizes 31 investigations in which NIOSH made recommendations to protect workers from potentially harmful job-related exposures to lead. Work settings ranged from bridges and shipyards where lead particles were generated by abrasive blasting, to an Army depot where employees were exposed to lead from solder in repairing night goggles and laser range finders.

Findings from the 31 investigations illustrate that:

- Workers may be at risk of potentially hazardous exposures anywhere lead is present on the job, not just in traditional settings like shipyards and battery manufacturing plants. For example, the NIOSH investigations confirmed worker lead exposures in a remodeling project where old paint was sanded from a historic house, and at a hospital radiation laboratory where radiation-shielding molds were made.
- Workers' families may also be at risk from lead dust or particles inadvertently carried home on the worker's clothing or skin, or from lead materials that are used in some home-based businesses such as electronic component repair.
- Often, lead exposures can be significantly reduced through simple, inexpensive measures, such as basic improvements in ventilation and use of good work practices.

Publication DHHS (NIOSH) Publication No. 2001-113 is available from NIOSH Publications Dissemination (1-800-356-4674) or at their web site: http://www.cdc.gov/niosh/2001-113.html.

NIOSH Issues Occupational Illness Report from BLS data.

NIOSH issued a report providing descriptive information on six of the most common occupational illnesses or conditions in the United States: 1) musculoskeletal disorders of the back, 2) musculoskeletal disorders of the upper extremities, 3) musculoskeletal disorders of the lower extremities, 4) hernia, 5) dermatitis, and 6) anxiety, stress, and neurotic disorders. The information presented here is not available from any other published or electronic source and can be obtained only by special request to BLS. The report is available as an Acrobat PDF file at http://www.cdc.gov/niosh/pdfs/2001-120.pdf.

NIOSH Issues Report on Occupational Hazards of Gluteraldehyde in Hospitals.

Glutaraldehyde is used as a cold sterilant to disinfect and clean heat-sensitive equipment such as dialysis instruments, surgical instruments, suction bottles, bronchoscopes, endoscopes, and ear, nose, and throat instruments. This chemical is also used as a tissue fixative in histology and pathology labs and as a hardening agent in the development of x-ray film. Glutaraldehyde is a colorless, oily liquid with a pungent odor. Hospital workers use it most often in a diluted form mixed with water. The strength of glutaraldehyde and water solutions typically ranges from 1% to 50%, but other formulations are available. Trade names include Cidex®, Sonacide®, Sporicidin®, Hospex®, Omnicide®, Metricide®, and Wavicide®. This booklet [DHHS (NIOSH) Publication No. 2001-115] is available from NIOSH or their web site at http://www.cdc.gov/niosh/2001-115.html

JUST THE FACTS

OSHA recently reminded U.S. employers to take precautions so workers in hot environments do not fall victim to serious health problems. Underscoring the message is the death toll in 1999 from heat-related causes: 34 workers died and 2,420 others experienced heat-related occupational injuries and illnesses serious enough to miss work, the agency said.

Laundries, foundries, bakeries, and construction projects are some of the settings where workers are particularly at risk, especially in the summer, according to OSHA.

Tips on Preventing and Managing Heat

The best defense is prevention. Here are some prevention tips:

- Drink more fluids (nonalcoholic), regardless of your activity level. Don't wait until you're thirsty to drink. Warning: If your doctor generally limits the amount of fluid you drink or has you on water pills, ask him how much you should drink while the weather is hot.

- Don't drink liquids that contain caffeine, alcohol, or large amounts of sugar–these actually cause you to lose more body fluid. Also, avoid very cold drinks, because they can cause stomach cramps.

- Stay indoors and, if at all possible, stay in an air-conditioned place. If your home does not have air conditioning, go to the shopping mall or public library–even a few hours spent in air conditioning can help your body stay cooler when you go back into the heat. Call your local health department to see if there are any heat-relief shelters in your area.

- Electric fans may provide comfort, but when the temperature is in the high 90s, fans will not prevent heat-related illness. Taking a cool shower or bath, or moving to an air-conditioned place, is a much better way to cool off.

- Wear lightweight, light-colored, loose-fitting clothing.

- NEVER leave anyone in a closed, parked vehicle.

- Although any one at any time can suffer from heat-related illness, some people are at greater risk than others. Check regularly on:

    - Infants and young children

    - People aged 65 or older

    - People who have a mental illness

    - Those who are physically ill, especially with heart disease or high blood pressure

- Visit adults at risk at least twice a day and closely watch them for signs of heat exhaustion or heat stroke. Infants and young children, of course, need much more frequent watching.

If you must be out in the heat:

- Limit your outdoor activity to morning and evening hours.

- Cut down on exercise. If you must exercise, drink two to four glasses of cool, nonalcoholic fluids each hour. A sports beverage can replace the salt and minerals you lose in sweat. If you are on a low-salt diet, talk with your doctor before drinking a sports beverage. Remember the warning in the first "tip" (above), too.

- Try to rest often in shady areas.

- Protect yourself from the sun by wearing a wide-brimmed hat (also keeps you cooler) and sunglasses and by putting on sunscreen of SPF 15 or higher (the most effective products say “broad spectrum” or “UVA/UVB protection” on their labels).

From the IAQ News

Microbial Fact #1:
Endotoxins are a term for the toxin characteristics found in the outer membrane of Gram-negative bacteria. They consist of molecules from the family lipopolysaccharides. Toxicity is associated with the lipid component and immunogenicity with the polysaccharide component.

Microbial Fact #2:
Tularmia is a disease of wild animals. Ticks, mosquitoes and biting flies have all been implicated as vectors of the bacteria that causes the infection of animals and humans. Contaminated hay, water, infected carcasses, chronically infected animals and aerosolized particles have been documented as sources of infection. *Francisella tularensis* is one of the most infectious bacteria known and can cause severe illness and death in humans. Thus, it is considered an important potential weapon for bioterrorism. (from CDC)

Fungal Fact #1:
Armillaria ostoyae is a fungus and one colony found in Washington state is perhaps the largest living organism, covering 1,500 acres and is believed to be between 400-1,000 years old.

Fungal Fact #2:
Histoplasmosis is an infectious disease of the lungs caused by the fungus *Histoplasma capsulatum*. The infection sometimes can spread to other parts of the body. This Histoplasma organism thrives in moderate temperatures and moist environments. Droppings from chickens, pigeons, starlings, blackbirds, and bats support its growth. Birds are not infected with it because of their high body temperatures, but they do carry it on their feathers. Bats can be infected because they have a lower body temperature than birds and can excrete the organism in their droppings. Because of the bats' natural habitat, caves often are sites where multiple people become infected simultaneously. To multiply, *Histoplasma capsulatum* produces small spores called conidia. The conidia of *Histoplasma capsulatum* are only two microns in diameter. When these conidia are inhaled, they are small enough that they enter the lungs and start an infection. Many of these infections are easily overlooked because they either produce mild symptoms or none at all. However, histoplasmosis can be severe and produce an illness similar to tuberculosis. (From National Institute of Environmental Health Sciences & National Institutes of Health)

For more on these tips and other IAQ information, visit their web site at http://www.aerotechlabs.com/

Study Pegs Workplace Regulation Costs at $91 Billion.

The Mercatus Center at George Mason University has estimated that Federal regulations are making workplaces safer, but at a staggering cost of $91 billion. The study concentrated on the regulations of the Labor Department, and the costliest of six broad categories was occupational safety and health regulations which came in at $48.6 billion. Last year a printout of federal regulations was 83,000 pages compared to 20,000 in 1970. The Code of Federal Regulations was 135,000 pages in 1998. The study commented that these hidden costs are borne by employers, but everybody gets to pay eventually. The full report is available at: http://www.mercatus.org/Workplace.pdf

ARMY ITEMS OF INTEREST - None

ADMINISTRATIVE INFORMATION

This document was prepared for the U.S. Army Center for Health Promotion and Preventive Medicine (USACHP) PM), Directorate of Occupational Health Sciences. The POC at the USACHPPM is Mrs. Sandra Monk; Program Manager; Industrial Hygiene Management Program; DSN: 584-2439; COM: 410. 436.2439; e-mail: Sandra.Monk@apg.amedd.army.mil.

This document summarizes information and regulatory actions that are relevant for Army Industrial Hygiene Program personnel. We distribute this summary in electronic form only. Please make it available to your staff if they do not have direct access to an electronic copy. A copy is posted on the Army IH Program Home Page *(http://chppm-www.apgea.army.mil/Armyih)*. If you would like to be added to the electronic mailing list or if your e-mail address changes, please contact Tammy Budkey, e-mail: tammy.budkey@apg.amedd.army.mil; or call her at DSN: 584-2439; COM: 410.436.2439; fax: 410.436.8795.

At a minimum; we review the following publications in preparing this summary: AIHA Journal; the Synergist; Today (ACGIH's Newsletter); The AAIH Newsletter; OSHA Week; the Federal Register; BNA OSHA Reporter; Applied Occupational and Environmental Hygiene; The Journal of Occupational and Environmental Medicine; The Journal of Environmental Health; Professional Safety; Safety and Health, Occupational Hazards; Occupational Health and Safety; and Industrial Safety and Hygiene News. We also gather information from a variety of sources on the Internet.

If you have questions or comments; please contact Jim Evenden at jevenden@lmi.org; 410.638.2081/2086 (voice) or 2093 (fax).